

09/982,221

- B3²
- 1 29. The multi-layer substrate structure in claim 22 wherein said layer and said
2 second layer have the same generic grid of vias.

- 1 30. The multi-layer substrate structure in claim 22 wherein said layer and said
2 second layer have the same generic grid of vias and the vias in the layer are
3 aligned with the vias in the second layer.

REMARKS

Claims 19, 21 to 25, 29 and 30 remain in the present application. Claims 26 to 28 have been canceled without prejudice. The amendments to the claims and the new claims are fully supported by the specification, claims and drawings as originally filed.

Reconsideration of the Examiner's decisions and reexamination of this application are respectfully requested.

A clean version of the amended claims is included with this Amendment. A Marked-Up Version Showing Changes Made is included in the Appendix.

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The drawing objections:

The Examiner's objections to the drawings are noted. A proposed drawing correction for Figures 3A-3C is being submitted with this Amendment and approval of this drawing correction is respectfully requested.

The §102 rejection:

Claim 19 has been rejected by the Examiner under 35 USC §102(b) as being anticipated by Thornberg U.S. Patent 5,360,948.

Claim 19 has been amended to make it clear that the vias are selectively filled with a conductive material and an insulating material.

Thornberg illustrates a programmable module having two signal layers. Each of the signal layers has a plurality of vias - some of which are filled with metal and some of which are left unfilled.

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It is apparent that Thornberg, therefore, cannot anticipate Applicants' claims since Thornberg does not show vias which are selectively filled with a conductive material and an insulating material.

The Examiner, however, argues that the open, unfilled vias of Thornberg are "as good as filled with insulating material".

Applicants respectfully disagree. While the unfilled vias of Thornberg may be as good as filled with insulating material (Applicants are assuming arguendo that this point is true), the unfilled vias of Thornberg are nevertheless not filled with an insulating material which is the structure claimed by Applicants. Therefore, Thornberg cannot anticipate Applicants' claim 19.

The §103 rejections:

I. Claims 21 to 25 have been rejected by the Examiner under 35 USC §103(a) as being unpatentable over Thornberg in view of Evans et al. U.S. Patent 6,255,602 (hereafter "Evans").

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Since claims 21 to 25 depend from claim 19, and claim 19 is believed to be allowable, then claims 21 to 25 should be allowable as well.

In addition, claim 22 is believed to be independently patentable. Claim 22 claims two layers, each of which has vias selectively filled with a conductive material and an insulating material. As noted above, Thornberg cannot teach a single layer having vias selectively filled with a conducting material and an insulating material. It follows then that Thornberg cannot teach two layers having vias selectively filled with a conducting material and an insulating material. Evans cannot supply the deficiency of Thornberg as Evans merely shows customizing wiring patterns by removing a portion of the wiring patterns. Accordingly, the combination of Thornberg and Evans cannot render obvious Applicants' claim 22.

II. Claims 26 to 28 have been rejected by the Examiner under 35 USC §103(a) as being unpatentable over Thornberg in view of Evans and further in view of Seki et al. U.S. Patent 5,277,929 (hereafter Seki).

In view of the cancellation of claims 26 to 28, this rejection is now moot.

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III. New claims 29 and 30 are believed to be patentable over the references provided by the Examiner. Both of claims 29 and 30 claim the layer and second layer have the same grid. It can be seen that this is not the case for Thornberg since the grid from one layer to the next is rotated 90 degrees as well as displaced by half of a grid spacing. Neither do Evans nor Seki teach the same grid between layers. Therefore, claims 29 and 30 are believed to be patentable over the cited references.

Cited but not applied prior art:

The prior art cited but not applied by the Examiner has been considered but is believed to not adversely affect the patentability of Applicants' claims.

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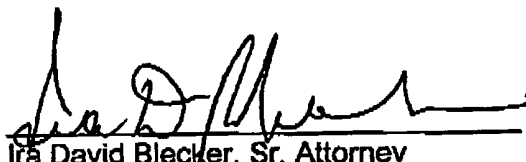
Summary:

In view of all of the preceding remarks, it is submitted that all of claims 19, 21 to 25, 29 and 33 are in condition for allowance. Further action with respect to the present application is earnestly solicited.

Respectfully submitted,

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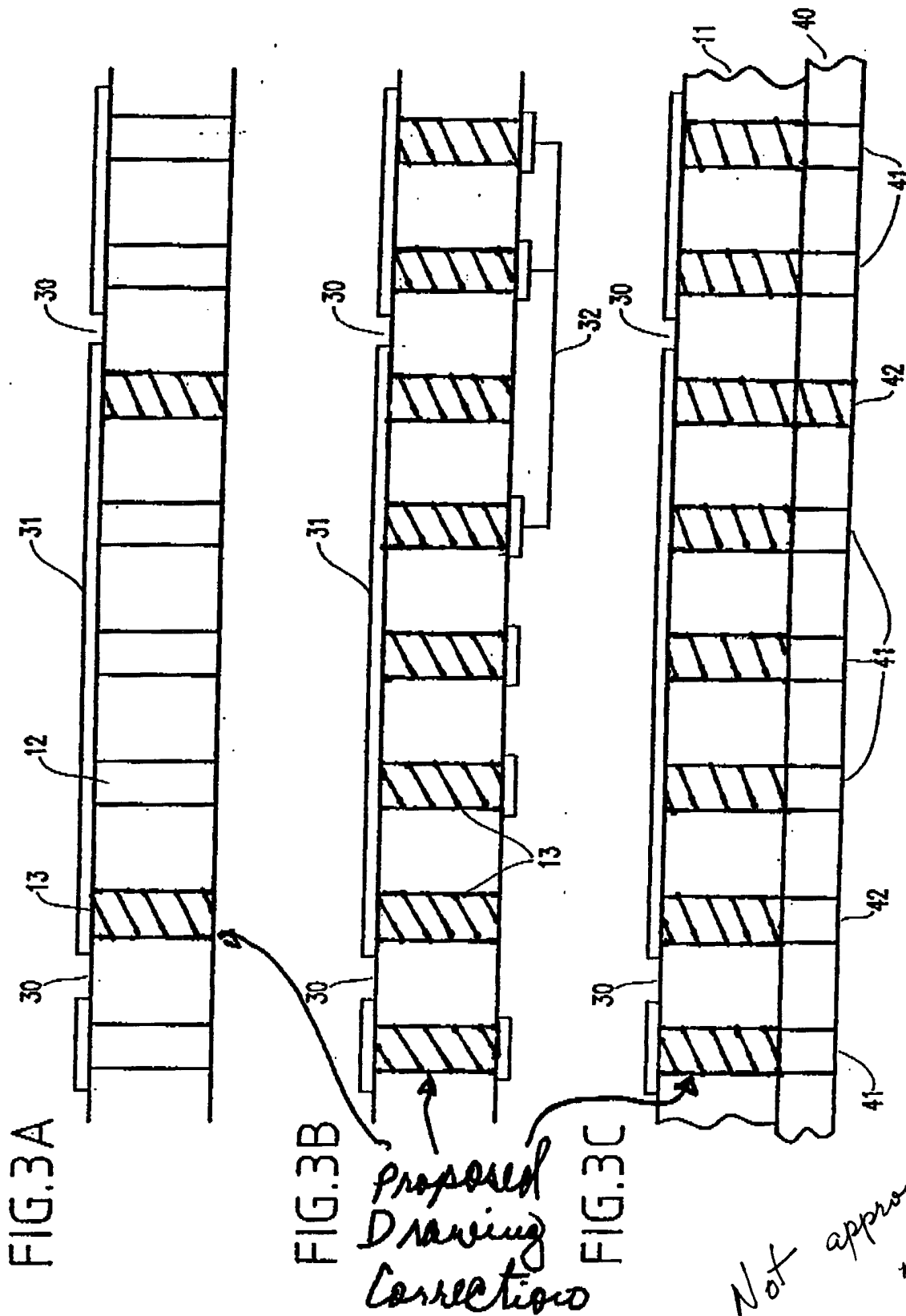
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APPENDIX
VERSION SHOWING CHANGES MADE

- 1 19. (Twice Amended) A multi-layer substrate structure comprising:
- 2 at least one layer having generic electrical features altered to customize said
- 3 layer,
- 4 wherein said electrical features include vias,
- 5 wherein said vias are selectively filled with [one of] a conducting material and an
- 6 insulating material.
-
- 1 22. (Twice Amended) The multi-layer substrate structure in claim 19, further
- 2 comprising a second layer similar to said layer and having said generic electrical
- 3 features including vias altered differently than said layer to customize said
- 4 second layer differently than said layer, wherein said vias in said second layer
- 5 are selectively filled with a conducting material and an insulating material.

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**Change Of Attorney Or Agent's Address In Application
(37 CFR 1.8(a))**

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October 18, 2001Examiner
Ishwarbhai B. PatelGroup Art Unit
2827Invention: **PRE-PATTERNED SUBSTRATE LAYERS FOR BEING PERSONALIZED AS NEEDED****TO THE ASSISTANT COMMISSIONER FOR PATENTS**

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